



SEQUENCE LISTING

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<120> HUMAN MONOCLONAL ANTIBODIES TO CTLA-4

<130> ABX-PF1 DIV1

<140> US 10/612497

<141> 2003-07-01

<150> US 09/472087

<151> 1999-12-23

<150> US 60/113647

<151> 1998-12-23

<160> 147

<170> PatentIn Ver. 2.1

<210> 1

<211> 463

<212> PRT

<213> Homo sapiens

<400> 1

Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
1 5 10 15

Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
20 25 30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Phe
35 40 45

Ser Ser His Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60

Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Arg Asn Lys Tyr Tyr Ala
65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
85 90 95

Thr Leu Phe Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
100 105 110

Tyr Tyr Cys Ala Arg Gly Gly His Phe Gly Pro Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
130 135 140

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala

145		150		155		160
Ala Leu Gly Cys	Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val	165		170		175
Ser Trp Asn Ser	Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala	180		185		190
Val Leu Gln Ser	Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val	195		200		205
Pro Ser Ser Asn	Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His	210		215		220
Lys Pro Ser Asn	Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys	225		230		235
Val Glu Cys Pro	Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val	245		250		255
Phe Leu Phe Pro	Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr	260		265		270
Pro Glu Val Thr	Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu	275		280		285
Val Gln Phe Asn	Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys	290		295		300
Thr Lys Pro Arg	Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser	305		310		315
Val Leu Thr Val	Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys	325		330		335
Cys Lys Val Ser	Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile	340		345		350
Ser Lys Thr Lys	Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro	355		360		365
Pro Ser Arg Glu	Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu	370		375		380
Val Lys Gly Phe	Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn	385		390		395
Gly Gln Pro Glu	Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser	405		410		415
Asp Gly Ser Phe	Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg	420		425		430
Trp Gln Gln Gly	Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu	435		440		445
His Asn His Tyr	Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys	450		455		460

<210> 2

<211> 464

<212> PRT

<213> Homo sapiens

<400> 2

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Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
 1           5           10           15

Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
      20           25           30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Phe Thr Phe
      35           40           45

Ser Asn Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
      50           55           60

Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys His Tyr Gly
      65           70           75           80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Ser Asp Asn Ser Lys Asn
      85           90           95

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
      100          105          110

Tyr Tyr Cys Ala Arg Gly Glu Arg Leu Gly Ser Tyr Phe Asp Tyr Trp
      115          120          125

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
      130          135          140

Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr
      145          150          155          160

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
      165          170          175

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
      180          185          190

Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr
      195          200          205

Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp
      210          215          220

His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys
      225          230          235          240

Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser
      245          250          255

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
      260          265          270

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
      275          280          285

Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
      290          295          300

Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val

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305                      310                      315                      320
Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
      325                      330                      335

Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr
      340                      345                      350

Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
      355                      360                      365

Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
      370                      375                      380

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
385                      390                      395                      400

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp
      405                      410                      415

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
      420                      425                      430

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
      435                      440                      445

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
450                      455                      460

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<210> 3
<211> 163
<212> PRT
<213> Homo sapiens

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<400> 3
Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
  1           5           10           15

Ser Ser His Gly Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
      20           25           30

Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Arg Asn Lys Asp Tyr Ala
      35           40           45

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Lys
      50           55           60

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
      65           70           75           80

Tyr Tyr Cys Ala Arg Val Ala Pro Leu Gly Pro Leu Asp Tyr Trp Gly
      85           90           95

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
      100          105          110

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
      115          120          125

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
      130          135          140

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Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
 145 150 155 160

Val Leu Gln

<210> 4

<211> 463

<212> PRT

<213> Homo sapiens

<400> 4

Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
 1 5 10 15

Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Glu
 20 25 30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Phe Thr Phe
 35 40 45

Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60

Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys His Tyr Ala
 65 70 75 80

Asp Ser Ala Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
 85 90 95

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
 100 105 110

Tyr Tyr Cys Ala Arg Ala Gly Leu Leu Gly Tyr Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
 130 135 140

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
 145 150 155 160

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 165 170 175

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
 180 185 190

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
 195 200 205

Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His
 210 215 220

Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys
 225 230 235 240

Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
 245 250 255

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr

260					265					270					
Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu
	275						280					285			
Val	Gln	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys
	290					295					300				
Thr	Lys	Pro	Arg	Glu	Glu	Gln	Phe	Asn	Ser	Thr	Phe	Arg	Val	Val	Ser
305					310					315					320
Val	Leu	Thr	Val	Val	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys
				325					330					335	
Cys	Lys	Val	Ser	Asn	Lys	Gly	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile
			340					345					350		
Ser	Lys	Thr	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro
		355					360					365			
Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu
		370				375					380				
Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn
385						390					395				400
Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Met	Leu	Asp	Ser
				405					410					415	
Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg
			420					425					430		
Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu
		435					440					445			
His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys	
	450					455					460				

<210> 5
 <211> 169
 <212> PRT
 <213> Homo sapiens

<400> 5															
Gly	Val	Val	Gln	Pro	Gly	Arg	Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser
1				5					10					15	
Gly	Phe	Thr	Phe	Ser	Ser	Tyr	Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro
		20						25					30		
Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Val	Ile	Trp	Tyr	Asp	Gly	Ser	Asn
		35					40					45			
Lys	Tyr	Tyr	Ala	Asp	Ser	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp
	50					55					60				
Asn	Ser	Lys	Asn	Thr	Leu	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu
65					70					75					80
Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Gly	Ala	Arg	Ile	Ile	Thr	Pro
				85					90					95	

Cys Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala
 100 105 110
 Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser
 115 120 125
 Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
 130 135 140
 Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly
 145 150 155 160
 Val His Thr Phe Pro Ala Val Leu Gln
 165

<210> 6
 <211> 167
 <212> PRT
 <213> Homo sapiens

<400> 6
 Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser
 1 5 10 15
 Gly Phe Ile Phe Ser Ser His Gly Ile His Trp Val Arg Gln Ala Pro
 20 25 30
 Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Arg Asn
 35 40 45
 Lys Asp Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
 50 55 60
 Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
 65 70 75 80
 Asp Thr Ala Val Tyr Tyr Cys Ala Arg Val Ala Pro Leu Gly Pro Leu
 85 90 95
 Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
 100 105 110
 Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
 115 120 125
 Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
 130 135 140
 Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
 145 150 155 160
 Thr Phe Pro Ala Val Leu Gln
 165

<210> 7
 <211> 172
 <212> PRT
 <213> Homo sapiens

<400> 7

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Ser Gly Pro Gly Leu Val Lys Pro Ser Gln Ile Leu Ser Leu Thr Cys
 1          5          10          15

Thr Val Ser Gly Gly Ser Ile Ser Ser Gly Gly His Tyr Trp Ser Trp
          20          25          30

Ile Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr
          35          40          45

Tyr Ile Gly Asn Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr
 50          55          60

Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser
 65          70          75          80

Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Gly
          85          90          95

Asp Tyr Tyr Gly Ile Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
100          105          110

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys
115          120          125

Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys
130          135          140

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
145          150          155          160

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
          165          170

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<210> 8

<211> 153

<212> PRT

<213> Homo sapiens

<400> 8

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Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 1          5          10          15

Ser Ser His Gly Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
          20          25          30

Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Arg Asn Lys Asp Tyr Ala
          35          40          45

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
50          55          60

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
65          70          75          80

Tyr Tyr Cys Ala Arg Val Ala Pro Leu Gly Pro Leu Asp Tyr Trp Gly
          85          90          95

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
100          105          110

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Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
 115 120 125

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 130 135 140

Ser Trp Asn Ser Gly Ala Leu Thr Ser
 145 150

<210> 9

<211> 167

<212> PRT

<213> Homo sapiens

<220>

<221> MOD_RES

<222> (103)

<223> Any amino acid

<400> 9

Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser
 1 5 10 15

Gly Phe Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro
 20 25 30

Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn
 35 40 45

Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
 50 55 60

Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
 65 70 75 80

Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asp Pro Arg Gly Ala Thr Leu
 85 90 95

Tyr Tyr Tyr Tyr Tyr Arg Xaa Asp Val Trp Gly Gln Gly Thr Thr Val
 100 105 110

Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala
 115 120 125

Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu
 130 135 140

Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly
 145 150 155 160

Ala Leu Thr Ser Gly Val His
 165

<210> 10

<211> 151

<212> PRT

<213> Homo sapiens

<400> 10

Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser

1	5	10	15
Gly Phe Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro	20	25	30
Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser His	35	40	45
Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp	50	55	60
Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu	65	70	75
Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Ala Val Val Val Pro Ala	85	90	95
Ala Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala	100	105	110
Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser	115	120	125
Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe	130	135	140
Pro Glu Pro Val Thr Val Ser	145	150	

<210> 11
 <211> 146
 <212> PRT
 <213> Homo sapiens

<220>
 <221> MOD_RES
 <222> (22)
 <223> Any amino acid

<400> 11
Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
1 5 10 15
Phe Thr Phe Ser Ser Xaa Gly Met His Trp Val Arg Gln Ala Pro Gly
20 25 30
Lys Gly Leu Glu Trp Val Ala Val Ile Trp Ser Asp Gly Ser His Lys
35 40 45
Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
50 55 60
Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
65 70 75 80
Thr Ala Val Tyr Tyr Cys Ala Arg Gly Thr Met Ile Val Val Gly Thr
85 90 95
Leu Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
100 105 110

Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr
 115 120 125

Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
 130 135 140

Glu Pro
 145

<210> 12
 <211> 174
 <212> PRT
 <213> Homo sapiens

<400> 12
 Ser Gly Gly Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys
 1 5 10 15

Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr Gly Val His Trp Val Arg
 20 25 30

Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp
 35 40 45

Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile
 50 55 60

Ser Arg Asp Asn Ser Lys Ser Thr Leu Tyr Leu Gln Met Asn Ser Leu
 65 70 75 80

Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Tyr Tyr
 85 90 95

Asp Phe Trp Ser Gly Arg Gly Gly Met Asp Val Trp Gly Gln Gly Thr
 100 105 110

Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
 115 120 125

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
 130 135 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
 145 150 155 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
 165 170

<210> 13
 <211> 163
 <212> PRT
 <213> Homo sapiens

<400> 13
 Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 1 5 10 15

Thr Phe Ser Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
 20 25 30

$\mathbb{R}^n \times \mathbb{R}^n$ $\mathbb{R}^n \times \mathbb{R}^n$ $\mathbb{R}^n \times \mathbb{R}^n$

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
 165 170 175
 Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
 180 185 190
 Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
 195 200 205
 Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
 210 215 220
 Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 225 230 235

<210> 15
 <211> 233
 <212> PRT
 <213> Homo sapiens

<400> 15
 Met Glu Thr Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
 1 5 10 15
 Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser
 20 25 30
 Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Thr Ser Val Ser
 35 40 45
 Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg
 50 55 60
 Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg
 65 70 75 80
 Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg
 85 90 95
 Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ile
 100 105 110
 Ser Pro Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr
 115 120 125
 Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu
 130 135 140
 Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro
 145 150 155 160
 Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly
 165 170 175
 Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr
 180 185 190
 Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His
 195 200 205

Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val
 210 215 220

Thr Lys Ser Phe Asn Arg Gly Glu Cys
 225 230

<210> 16
 <211> 139
 <212> PRT
 <213> Homo sapiens

<400> 16
 Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg
 1 5 10 15

Ala Ser Gln Ser Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro
 20 25 30

Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr
 35 40 45

Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
 50 55 60

Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys
 65 70 75 80

Gln Gln Tyr Gly Arg Ser Pro Phe Thr Phe Gly Pro Gly Thr Lys Val
 85 90 95

Asp Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro
 100 105 110

Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu
 115 120 125

Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln
 130 135

<210> 17
 <211> 234
 <212> PRT
 <213> Homo sapiens

<400> 17
 Met Glu Thr Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
 1 5 10 15

Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser
 20 25 30

Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
 35 40 45

Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
 50 55 60

Arg Pro Leu Ile Tyr Gly Val Ser Ser Arg Ala Thr Gly Ile Pro Asp
 65 70 75 80

Arg	Phe	Ser	Gly	Ser 85	Gly	Ser	Gly	Thr	Asp 90	Phe	Thr	Leu	Thr	Ile	Ser
Arg	Leu	Glu	Pro 100	Glu	Asp	Phe	Ala	Val 105	Tyr	Tyr	Cys	Gln	Gln 110	Tyr	Gly
Ile	Ser	Pro 115	Phe	Thr	Phe	Gly	Pro 120	Gly	Thr	Lys	Val	Asp 125	Ile	Lys	Arg
Thr	Val 130	Ala	Ala	Pro	Ser	Val 135	Phe	Ile	Phe	Pro	Pro 140	Ser	Asp	Glu	Gln
Leu 145	Lys	Ser	Gly	Thr	Ala 150	Ser	Val	Val	Cys	Leu 155	Leu	Asn	Asn	Phe	Tyr 160
Pro	Arg	Glu	Ala	Lys 165	Val	Gln	Trp	Lys	Val 170	Asp	Asn	Ala	Leu	Gln 175	Ser
Gly	Asn	Ser	Gln 180	Glu	Ser	Val	Thr	Glu 185	Gln	Asp	Ser	Lys	Asp 190	Ser	Thr
Tyr	Ser	Leu 195	Ser	Ser	Thr	Leu	Thr 200	Leu	Ser	Lys	Ala	Asp 205	Tyr	Glu	Lys
His	Lys 210	Val	Tyr	Ala	Cys	Glu 215	Val	Thr	His	Gln	Gly 220	Leu	Ser	Ser	Pro
Val 225	Thr	Lys	Ser	Phe	Asn 230	Arg	Gly	Glu	Cys						

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<210> 18
<211> 152
<212> PRT
<213> Homo sapiens
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<400> 18															
Gln 1	Ser	Pro	Ser	Ser 5	Leu	Ser	Ala	Ser	Val 10	Gly	Asp	Arg	Val	Thr 15	Ile
Thr	Cys	Arg	Ala 20	Ser	Gln	Ser	Ile	Asn 25	Thr	Tyr	Leu	Ile	Trp 30	Tyr	Gln
Gln	Lys	Pro 35	Gly	Lys	Ala	Pro	Asn 40	Phe	Leu	Ile	Ser	Ala 45	Thr	Ser	Ile
Leu	Gln 50	Ser	Gly	Val	Pro	Ser 55	Arg	Phe	Arg	Gly	Ser 60	Gly	Ser	Gly	Thr
Asn 65	Phe	Thr	Leu	Thr	Ile 70	Asn	Ser	Leu	His	Pro 75	Glu	Asp	Phe	Ala	Thr 80
Tyr	Tyr	Cys	Gln	Gln 85	Ser	Tyr	Ser	Thr	Pro 90	Phe	Thr	Phe	Gly	Pro 95	Gly
Thr	Lys	Val	Asp 100	Ile	Lys	Arg	Thr	Val 105	Ala	Ala	Pro	Ser	Val 110	Phe	Ile
Phe	Pro	Pro 115	Ser	Asp	Glu	Gln	Leu 120	Lys	Ser	Gly	Thr	Ala 125	Ser	Val	Val
Cys	Leu	Leu	Asn	Asn	Phe	Tyr	Pro	Arg	Glu	Ala	Lys	Val	Gln	Trp	Lys

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 Val Asp Asn Ala Leu Gln Ser Gly
 145 150

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 <211> 142
 <212> PRT
 <213> Homo sapiens

 <400> 19
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 Cys Arg Ala Ser Gln Ser Ile Ser Ser Asn Phe Leu Ala Trp Tyr Gln
 20 25 30

 Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Arg Pro Ser Ser
 35 40 45

 Arg Ala Thr Gly Ile Pro Asp Ser Phe Ser Gly Ser Gly Ser Gly Thr
 50 55 60

 Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Leu
 65 70 75 80

 Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Phe Thr Phe Gly Pro Gly
 85 90 95

 Thr Lys Val Asp Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile
 100 105 110

 Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val
 115 120 125

 Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln
 130 135 140

 <210> 20
 <211> 155
 <212> PRT
 <213> Homo sapiens

 <400> 20
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 1 5 10 15

 Cys Arg Ala Ser Gln Ser Ile Gly Ser Ser Leu His Trp Tyr Gln Gln
 20 25 30

 Lys Pro Asp Gln Ser Pro Lys Leu Leu Ile Lys Tyr Ala Ser Gln Ser
 35 40 45

 Phe Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
 50 55 60

 Phe Thr Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala Thr Tyr
 65 70 75 80

 Tyr Cys His Gln Ser Ser Ser Leu Pro Leu Thr Phe Gly Gly Gly Thr

				85						90						95			
Lys	Val	Glu	Ile	Lys	Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe				
			100					105					110						
Pro	Pro	Ser	Asp	Glu	Gln	Leu	Lys	Ser	Gly	Thr	Ala	Ser	Val	Val	Cys				
		115					120					125							
Leu	Leu	Asn	Asn	Phe	Tyr	Pro	Arg	Glu	Ala	Lys	Val	Gln	Trp	Lys	Val				
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Asp	Asn	Ala	Leu	Gln	Ser	Gly	Asn	Ser	Gln	Glu									
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 <213> Homo sapiens

<400> 21																			
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			20					25					30						
Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala	Ser	Ser				
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Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr				
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Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe	Ala	Val				
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Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Arg	Ser	Pro	Phe	Thr	Phe	Gly	Pro	Gly				
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Thr	Lys	Val	Asp	Ile	Lys	Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile				
			100					105					110						
Phe	Pro	Pro	Ser	Asp	Glu	Gln	Leu	Lys	Ser	Gly	Thr	Ala	Ser	Val	Val				
		115					120					125							
Cys	Leu	Leu	Asn	Asn	Phe	Tyr	Pro	Arg	Glu	Ala	Lys	Val	Gln	Trp	Lys				
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Gly	Gly																		
145																			

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 <213> Homo sapiens

<400> 22																			
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20					25					30					
Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile	Tyr	Ala	Ala	Ser	Ser	Leu	Gln
		35					40					45			
Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe
		50				55						60			
Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	Phe	Ala	Thr	Tyr	Tyr
		65				70					75				80
Cys	Gln	Gln	Tyr	Tyr	Ser	Thr	Pro	Phe	Thr	Phe	Gly	Pro	Gly	Thr	Lys
				85					90					95	
Val	Glu	Ile	Lys	Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro
			100					105					110		
Pro	Ser	Asp	Glu	Gln	Leu	Lys	Ser	Gly	Thr	Ala	Ser	Val	Val	Cys	Leu
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Ile	Thr	Cys	Arg	Ala	Ser	Gln	Asn	Ile	Ser	Arg	Tyr	Leu	Asn	Trp	Tyr
			20				25						30		
Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Phe	Leu	Ile	Tyr	Val	Ala	Ser
		35					40					45			
Ile	Leu	Gln	Ser	Gly	Val	Pro	Ser	Gly	Phe	Ser	Ala	Ser	Gly	Ser	Gly
		50				55					60				
Pro	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	Phe	Ala
		65				70					75				80
Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Tyr	Ser	Thr	Pro	Phe	Thr	Phe	Gly	Pro
				85					90					95	
Gly	Thr	Lys	Val	Asp	Ile	Lys	Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe
			100					105					110		
Ile	Phe	Pro	Pro	Ser	Asp	Glu	Gln	Leu	Lys	Ser	Gly	Thr	Ala	Ser	Val
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Val	Cys	Leu	Leu	Asn	Asn										
		130													

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 <212> PRT
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<400> 24

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
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Ile Thr Cys Arg Ala Ser Gln Ser Ile Cys Asn Tyr Leu Asn Trp Tyr
 20 25 30

Gln Gln Lys Pro Gly Lys Ala Pro Arg Val Leu Ile Tyr Ala Ala Ser
 35 40 45

Ser Leu Gln Gly Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
 50 55 60

Ile Asp Cys Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 65 70 75 80

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ile Thr Pro Phe Thr Phe Gly Pro
 85 90 95

Gly Thr Arg Val Asp Ile Glu Arg Thr Val Ala Ala Pro Ser Val Phe
 100 105 110

Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val
 115 120 125

Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp
 130 135 140

Lys Val Asp Asn Ala Tyr
 145 150

<210> 25

<211> 139

<212> PRT

<213> Homo sapiens

<400> 25

Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys
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Arg Ser Ser Gln Ser Leu Val Tyr Ser Asp Gly Asn Thr Tyr Leu Asn
 20 25 30

Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys
 35 40 45

Val Ser Asn Trp Asp Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly
 50 55 60

Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp
 65 70 75 80

Val Gly Val Tyr Tyr Cys Met Gln Gly Ser His Trp Pro Pro Thr Phe
 85 90 95

Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser
 100 105 110

Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala
 115 120 125

Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro
 130 135

<210> 26
 <211> 133
 <212> PRT
 <213> Homo sapiens

<400> 26
 Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu
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 20 25 30
 Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly
 35 40 45
 Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu
 50 55 60
 Lys Leu Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met
 65 70 75 80
 Gln Ala Leu Gln Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu
 85 90 95
 Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser
 100 105 110
 Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn
 115 120 125
 Asn Phe Tyr Pro Arg
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 <211> 1392
 <212> DNA
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 <211> 1395
 <212> DNA
 <213> Homo sapiens

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 <211> 489
 <212> DNA
 <213> Homo sapiens

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gatggaagaa	ataaagacta	tgcagactcc	gtgaaggggc	gattcaccat	ctccagagac	180
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<210> 30
 <211> 1392
 <212> DNA
 <213> Homo sapiens

<400> 30

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<210> 31

<211> 507

<212> DNA

<213> Homo sapiens

<400> 31

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gttatatggt atgatggaag taataaatac tatgcagact ccgtgaaggg ccgattcacc 180
atctccagag acaattccaa gaacacgctg tatctgcaaa tgaacagcct gagagccgag 240
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cccctggcgc cctgctccag gagcacctcc gagagcacag cgccctggg ctgcctggtc 420
aaggactact tccccgaacc ggtgacggtg tcgtggaact caggcgtctc gaccagcggc 480
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<210> 32

<211> 501

<212> DNA

<213> Homo sapiens

<400> 32

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gcgccctgct ccaggagcac ctccgagagc acagcggccc tgggctgcct ggtcaaggac 420
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accttcccag ctgtcctaca g                                     501

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<210> 33
 <211> 516
 <212> DNA
 <213> Homo sapiens

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 ctggagtga ttgggtacat ctattacatt gggaacacct actacaacc gtccctcaag 180
 agtcgagtta ccatacagt agacacgtct aagaaccagt tctccctgaa gctgagctct 240
 gtgactgccg cggacacggc cgtgtattat tgtgcgagag atagtgggga ctactacggt 300
 atagacgtct cgggccaagg gaccacggtc accgtctcct cagcttcac caagggcca 360
 tccgtcttcc ccctggcgcc ctgctccagg agcacctcc agagcacagc cgccctgggc 420
 tgctgtgtca aggactactt ccccgaacc gtgacggtgt cgtggaactc aggcgccttg 480
 accagcgcg tgccacacctt cccggctgtc ctacaa 516

<210> 34
 <211> 459
 <212> DNA
 <213> Homo sapiens

<400> 34
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 gatggaagaa ataaagacta tgcagactcc gtgaagggcc gattcaccat ctccagagac 180
 aattccaaga acacgctgta ttgcaaattg aacagcctga gagccgagga cacggctgtg 240
 tattactgtg cgagagtggc cccactgggg ccacttgact actggggcca gggaaccctg 300
 gtccacgtct cctcagcctc caccaagggc ccactcgtct tccccctggc gccctgctcc 360
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 ccggtgacgg tgcgtggaa ctcaggcgct ctgaccage 459

<210> 35
 <211> 503
 <212> DNA
 <213> Homo sapiens

<400> 35
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<210> 36
 <211> 451
 <212> DNA
 <213> Homo sapiens

<400> 36
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 atctccagag acaattccaa gaacacgctg tatctgcaaa tgaacagcct gagagccgag 240
 gacacggctg tgtattactg tgcgagaggc gctgtagtag taccagctgc tatggacgtc 300
 tggggccaag ggaccacggt caccgtctcc tcagcctcca ccaagggcc atcgggtcttc 360

```

ccccctggcgc cctgctccag gagcacctcc gagagcacag cggccctggg ctgcctggtc 420
aaggactact tccccgaacc ggtgacggtg t                                     451

```

```

<210> 37
<211> 438
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> modified_base
<222> (64)
<223> a, c, t, g, other or unknown

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<400> 37
gtgggtccagc ctgggagggtc cctgagactc tcctgtgcag cgtctggatt caccttcagt 60
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atatggtctg atggaagtca taaatactat gcagactccg tgaagggccg attcaccatc 180
tccagagaca attccaagaa cacgctgtat ctgcaaatac acagcctgag agccgaggac 240
acggctgtgt attactgtgc gagaggaaat atgatagtag tgggtaccct tgactactgg 300
ggccagggaa ccctggtcac cgtctcctca gcctccacca agggcccatc ggtcttcccc 360
ctggcgccct gctccaggag cacctccgag agcacagcgg ccctgggctg cctgggtcaag 420
gactacttcc ccgaaccg                                     438

```

```

<210> 38
<211> 562
<212> DNA
<213> Homo sapiens

```

```

<400> 38
tcctgtgcag cgtctggatt caccttcagt tactatggcg tctgggggag gcgtgggtcca 60
gcctgggagg tcctgagac tctcctgtgc agcgtctgga ttcaccttca gtagctatgg 120
cgtgcactgg gtccgccagg ctccaggcaa ggggctggag tgggtggcag ttatatggta 180
tgatggaagt aataaatact atgcagactc cgtgaagggc cgattcacca tctccagaga 240
caattccaag agcacgctgt atctgcaaat gaacagcctg agagccgagg acacggctgt 300
gtattattgt gcgagagact cgtattacga tttttggagt ggtcggggcg gtatggacgt 360
ctggggccaa gggaccacgg tcaccgtctc ctcagcctcc accaagggcc catcggtctt 420
ccccctggcg ccctgtctca ggagcacctc cgagagcaca gcggccctgg gctgcctggg 480
caaggactac ttccccgaac cgggtgacggg gtcgtggaac tcaggcgctc tgaccagcgg 540
cgtgcacacc ttcccagctg tc                                     562

```

```

<210> 39
<211> 490
<212> DNA
<213> Homo sapiens

```

```

<400> 39
gtccagcctg ggagggtccct gagactctcc tgtgcagcgt ctggattcac cttcagtaac 60
tatgccatgc actgggtccg ccagggtcca ggcaaggggc tggagtgggt ggtagttatt 120
tggcatgatg gaaataataa atactatgca gagtccgtga agggccgatt caccatctcc 180
agagacaatt ccaagaacac gctgtatctg caaatgaaca gcctgagagc cgaggacacg 240
gctgtatatg actgtgcgag agatcagggc actggctggg acggaggctt tgacttctgg 300
ggccagggaa ccctggtcac cgtctcctca gcctccacca agggcccatc ggtcttcccc 360
ctggcgccct gctccaggag cacctccgag agcacagcgg ccctgggctg cctgggtcaag 420
gactacttcc ccgaaccggg gacgggtgtcg tggaaactcag gcgctctgac cagcggcgtg 480
cacaccttcc                                     490

```

```

<210> 40
<211> 708

```


<212> DNA
 <213> Homo sapiens

<400> 40
 atggaaaccc cagcgcagct tctcttctct ctgtactctt ggctcccaga taccaccgga 60
 gaaatttgtg tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 120
 ctctcctgca gggccagtc gagtattagc agcagcttct tagcctggta ccagcagaga 180
 cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac tggcatccca 240
 gacaggttca gtggcagtg gtctgggaca gaattcactc tcaccatcag cagactggag 300
 cctgaagatt ttgcagtgt ttactgtcag cagtatggta cctcaccctg gacgttcggc 360
 caagggacca aggtggaaat caaacgaact gtggctgcac catctgtctt catcttccc 420
 ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc 480
 tatcccagag aggccaaagt acagtggaa gtggataacg ccctccaatc gggtaactcc 540
 caggagagtg tcacagagca ggacagcaag gacagcact acagcctcag cagcaccctg 600
 acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt caccatcag 660
 ggcttgagct cgcccgtcac aaagagcttc aacaggggag agtgtag 708

<210> 41
 <211> 702
 <212> DNA
 <213> Homo sapiens

<400> 41
 atggaaaccc cagcgcagct tctcttctct ctgtactctt ggctcccaga taccaccgga 60
 gaaatttgtg tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 120
 ctctcctgca ggaccagtg tagcagcagt tacttagcct ggtaccagca gaaacctggc 180
 caggctccca ggctcctcat ctatggtgca tccagcaggg cactggcat cccagacagg 240
 ttcagtggca gtgggtctgg gacagacttc actctcacca tcagcagact ggagcctgaa 300
 gattttgcag tctattactg tcagcagtat ggcattctac ccttcaactt cggcggagg 360
 accaaggtgg agatcaagcg aactgtggct gaccatctg tcttcatctt cccgccatct 420
 gatgagcagt tgaaatctgg aactgcctct gttgtgtgcc tgetgaataa cttctatccc 480
 agagaggcca aagtacagtg gaaggtggat aacgcctcc aatcgggtaa ctcccaggag 540
 agtgtcacag agcaggacag caaggacagc acctacagcc tcagcagcac cctgacgctg 600
 agcaaagcag actacgagaa acacaaagtc tacgcctgcg aagtcaccca tcagggcctg 660
 agctcgcccc tcacaaagag cttcaacagg ggagagtgtt ag 702

<210> 42
 <211> 417
 <212> DNA
 <213> Homo sapiens

<400> 42
 ggcaccctgt ctttgtctcc aggggaaaga gccaccctct cctgcagggc cagtcagagt 60
 gtcagcagct acttagcctg gtaccagcag aaacctggcc aggtcccag actcctcatc 120
 tatggtgcat ccagcagggc cactggcatc ccagacaggt tcagtggcag tgggtctggg 180
 acagacttca ctctcaccat cagcagactg gagcctgagg attttgcagt gtattactgt 240
 cagcagtatg gtaggtcacc attcactttc ggccctggga ccaaagtgga tatcaagcga 300
 actgtggctg caccatctgt cttcatcttc ccgccatctg atgagcagtt gaaatctgga 360
 actgcctctg ttgtgtgcct gctgaataac ttctatccca gagaggccaa agtacag 417

<210> 43
 <211> 705
 <212> DNA
 <213> Homo sapiens

<400> 43
 atggaaaccc cagcgcagct tctcttctct ctgtactctt ggctcccaga taccaccgga 60
 gaaatttgtg tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 120
 ctctcctgta gggccagtc aagtgttagc agctacttag cctggtacca acagaaacct 180

```

ggccaggctc ccaggccccct catctatggt gtatccagca gggccactgg catcccagac 240
aggttcagtg gcagtgggtc tgggacagac ttcactctca ccatcagcag actggagcct 300
gaagattttg cagtgtatta ctgtcagcag tatggatatc caccattcac tttcggccct 360
gggaccaaag tggatatcaa acgaactgtg gctgcaccat ctgtcttcac cttcccgccca 420
tctgatgagc agttgaaatc tggaaactgcc tctgtttgtg gcctgctgaa taacttctat 480
cccagagagg ccaaagtaca gtggaagggtg gataacgccc tccaatcggg taactcccag 540
gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 600
ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 660
ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gtttag 705

```

```

<210> 44
<211> 458
<212> DNA
<213> Homo sapiens

```

```

<400> 44
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agtcagagca ttaacaccta tttaatttgg tatcagcaga aaccagggaa agccccaac 120
ttcctgatct ctgctacatc cattttgcaa agtgggggtcc catcaagggt ccgtggcagt 180
ggctctggga caaatttcac tctcaccatc aacagttctc atcctgaaga ttttgcaact 240
tactactgtc aacagagtta cagtacccca ttcactttcg gccctgggac caaagtggat 300
atcaaacgaa ctgtggctgc accatctgtc ttcattcttc cgccatctga tgagcagttg 360
aaatctggaa ctgcctctgt tgtgtgcctg ctgaataact tctatcccag agaggccaaa 420
gtacagtgga aggtggataa cgccctccaa tcgggtaa 458

```

```

<210> 45
<211> 426
<212> DNA
<213> Homo sapiens

```

```

<400> 45
tctccaggca ccctgtcttt gtctccaggg gaaagagcca ccctctcctg cagggccagt 60
cagagtatta gcagcaattt cttagcctgg taccagcaga aacctggcca ggctcccagg 120
ctcctcatct atcgtccatc cagcagggcc actggcatcc cagacagttt cagtggcagt 180
gggtctggga cagacttcac tctcaccatc agcagactgg agcctgagga ttttgatta 240
tattactgtc agcagtatgg tacgtcacca ttcactttcg gccctgggac caaagtggat 300
atcaagcgaa ctgtggctgc accatctgtc ttcattcttc cgccatctga tgagcagttg 360
aaatctggaa ctgcctctgt tgtgtgcctg ctgaataact tctatcccag agaggccaaa 420
gtacag 426

```

```

<210> 46
<211> 465
<212> DNA
<213> Homo sapiens

```

```

<400> 46
tctccagact ttcagtctgt gactccaaag gagaaagtca ccatcacctg ccgggccagt 60
cagagcattg gtagtagctt acattggtat cagcagaaac cagatcagtc tccaaagctc 120
ctcatcaagt atgcttccca gtccttctct ggggtccctc cgagggttcag tggcagtgga 180
tctgggacag atttcaccct caccatcaat agcctggaag ctgaagatgc tgcaacgtat 240
tactgtcatc agagtagtag ttaccgctc actttcggcg gagggaccaa ggtggagatc 300
aaacgaactg tggctgcacc atctgtcttc atcttccgc catctgatga gcagttgaaa 360
tctggaactg cctctgttgt gtgcctgctg aataacttct atcccagaga ggccaaagta 420
cagtgggaagg tggataacgc cctccaatcg ggtaactccc aggag 465

```

```

<210> 47
<211> 440
<212> DNA

```

<213> Homo sapiens

<400> 47

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cagtctccag gcaccctgtc tttgtctcca ggggaaagag ccaccctctc ctgcagggcc 60
agtcagagtg tcagcagcta cttagcctgg taccagcaga aacctggcca ggctcccagg 120
ctcctcatct atgggtgcatc cagcagggcc actggcatcc cagacagggtt cagtggcagt 180
gggtctggga cagacttcac tctcaccatc agcagactgg agcctgagga ttttgagtg 240
tattactgtc aacagtatgg taggtcacca ttcactttcg gccctgggac caaagtagat 300
atcaagcgaa ctgtggctgc accatctgtc ttcactttcc cgccatctga tgagcagttg 360
aaatctggaa ctgcctctgt tgtgtgcctg ctgaataact tctatcccag agaggccaaa 420
gtacagtgga aaggtgata                                     440
```

<210> 48

<211> 417

<212> DNA

<213> Homo sapiens

<400> 48

```
ccatcctccc tgtctgcatc tgtaggagac agagtcacca tcacttgccg ggcaagtcag 60
agcatthaaca gctattttaga ttggtatcag cagaaaccag ggaaagcccc taaactcctg 120
atctatgctg catccagttt gcaaagtggg gtcccatcaa gggttcagtgg cagtggatct 180
gggacagatt tcactctcac catcagcagt ctgcaacctg aagattttgc aacttactac 240
tgtcaacagt attacagtac tccattcact ttcgccctg ggaccaaagt ggaaatcaaa 300
cgaactgtgg ctgcaccatc tgtcttcac ttcccgccat ctgatgagca gttgaaatct 360
ggaactgcct ctggtgtgtg cctgctgaat aacttctatc ccagagaggc caaagta 417
```

<210> 49

<211> 402

<212> DNA

<213> Homo sapiens

<220>

<221> modified_base

<222> (207)

<223> a, c, t, g, other or unknown

<400> 49

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gcaagtcaga acattagcag gtattttaa tggatcaac agaaaccagg gaaagcccct 120
aagttcctga tctatgttgc atctattttg caaagtgggg tcccatcagg gttcagtgcc 180
agtggatctg ggccagattt cactctnacc atcagcagtc tgcaacctga agattttgca 240
acttactact gtcaacagag ttacagtacc ccattcactt tcggccctgg gaccaaagtg 300
gatatcaaac gaactgtggc tgcaccatct gtcttcacat tcccgccatc tgatgagcag 360
ttgaaatctg gaactgcctc tgttgtgtgc ctgctgaata ac                                     402
```

<210> 50

<211> 451

<212> DNA

<213> Homo sapiens

<400> 50

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accagtcctc catcctccct gtctgcatct gtaggagaca gagtcaccat cacttgccgg 60
gcaagtcaga gcatttgcaa ctattttaa tggatcagc agaaaccagg aaaagcccct 120
agggctctga tctatgctgc atccagtttg caaggtgggg tcccgtaag gttcagtggc 180
agtggatctg ggacagattg cactctcacc atcagcagtc tgcaacctga agattttgca 240
acttactact gtcaacagag ttacactacc ccattcactt tcggccctgg gaccagagtg 300
gatatcgaac gaactgtggc tgcaccatct gtcttcacat tcccgccatc tgatgagcag 360
ttgaaatctg gaactgcctc tgttgtgtgc ctgctgaata acttctatcc cagagaggcc 420
aaagtacagt ggaaggtgga taacgcctat t                                     451
```

<210> 51
 <211> 419
 <212> DNA
 <213> Homo sapiens

<400> 51
 ccactctccc tgcccgtcac ccttggacag ccggcctcca tctcctgcag gtctagtcaa 60
 agcctcgtat acagtgatgg aaacacctac ttgaattggg ttcagcagag gccaggccaa 120
 tctccaaggc gcctaattta taaggtttct aactgggact ctgggggtccc agacagattc 180
 agcggcagtg ggtcaggcac tgatttcaca ctgaaaatca gcagggtgga ggctgaggat 240
 gttgggggttt attactgcat gcaaggttca cactggcctc cgacgttcgg ccaagggacc 300
 aagggtggaaa tcaaacgaac tgtggctgca ccatctgtct tcatcttccc gccatctgat 360
 gagcagttga aatctggaac tgccctctgtt gtgtgcctgc tgaataactt ctatccccc 419

<210> 52
 <211> 419
 <212> DNA
 <213> Homo sapiens

<400> 52
 cctggagagc cggtttccat ctcttgcagg tctagtcaga gcctcctgca tagtaatgga 60
 tacaactatt tggattggta cctgcagaag ccaggacagt ctccacagct cctgatctat 120
 ttgggttcta atcgggcctc cggggtcctt gacaggttca gtggcagtg atcaggcaca 180
 gattttacac tgaaactcag cagagtggag gctgaggatg ttgggggttta ttactgcatg 240
 caagctctac aaactcctct cactttcggc ggagggacca aggtggagat caaacgaact 300
 gtggctgcac catctgtctt catcttcccg ccatctgatg agcagttgaa atctggaact 360
 gcctctgttg tgtgcctgct gaataacttc tatcccagar aggccaaagt acattccat 419

<210> 53
 <211> 1392
 <212> DNA
 <213> Homo sapiens

<400> 53
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 tgtgtagcgt ctggattcac cttcagtagc catggcatgc actgggtccg ccaggctcca 180
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 caaatgaaca gcctgagagc cgaggacacg gctgtgtatt actgtgcgag aggaggtcac 360
 ttcggtcctt ttgactactg gggccaggga accctggtca ccgtctctc agcctccacc 420
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 gtcgagtgcc caccgtgccc agcaccacct gtggcaggac cgtcagttt cctcttcccc 780
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 cataatgcca agacaaagcc acgggaggag cagttcaaca gcacgttccg tgtggtcagc 960
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 gggcagccgg agaacaacta caagaccaca cctcccatgc tggactccga cggctccttc 1260
 ttctcttaca gcaagctcac cgtggacaag agcaggtggc agcaggggaa cgtcttctca 1320
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 ccgggtaaat ga 1392

<210> 54
 <211> 1999
 <212> DNA
 <213> Homo sapiens

<400> 54
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 tgtgtagcgt ctggattcac cttcagtagc catggcatgc actgggtccg ccagggtcca 180
 ggcaaggggc tggagtgggt ggcagttata tggtagatg gaagaaataa atactatgca 240
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 cagttcaaca gcacgttccg tgtggtcagc gtctcaccg ttgtgcacca ggactggctg 1500
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 accatctcca aaaccaaagg tgggacccgc ggggtatgag ggccacatgg acagaggccg 1620
 gctcggccca ccctctgccc tgggagtga cgtgtgcca acctctgtcc ctacagggca 1680
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 ctctctcttc ctctacagca agctcaccgt ggacaagagc aggtggcagc aggggaacgt 1920
 cttctcatgc tccgtgatgc atgaggctct gcacaaccac tacacgcaga agagcctctc 1980
 cctgtctccg ggtaaatga 1999

<210> 55
 <211> 1992
 <212> DNA
 <213> Homo sapiens

<400> 55
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 gtgcagctgg tggagtctgg gggaggcgtg gtccagcctg ggaggtccct gagactctcc 120
 tgtgtagcgt ctggattcac cttcagtagc catggcatgc actgggtccg ccagggtcca 180
 ggcaaggggc tggagtgggt ggcagttata tggtagatg gaagaaataa atactatgca 240
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 caaatgaaca gcctgagagc cgaggacacg gctgtgtatt actgtgagag aggaggtcac 360
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 aagggcccat cggctcttccc cctggcgccc tgctccagga gcacctccga gagcacagcg 480
 gccctgggct gcctgggtcaa ggactacttc cccgaaccgg tgacggtgtc gtggaactca 540
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 tccctcagca gcgtggtgac cgtgccctcc agcaacttcg gcacccagac ctacacctgc 660
 aacgtagatc acaagcccag caacaccaag gtggacaaga cagttgagcg caaatgttgt 720

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gtcagagtgcc caccgtgccc agcaccacct gtggcaggac cgtcagtttt cctcttcccc 780
ccaaaaccca aggcacacct catgatctcc cggacccctg aggtcacgtg cgtgggtggtg 840
gacgtgagcc acgaagacct cgaggtccag ttcaactggg acgtggacgg cgtggaggtg 900
cataatgcc aagacaaagcc acgggaggag cagttccaaa gcacgttccg tgtggtcagc 960
gtcctcaccg ttgtgcacca ggactggctg aacggcaagg agtacaagtg caaggtctcc 1020
aaciaaaggcc tcccagcccc catcgagaaa accatctcca aaaccaaagg gcagccccga 1080
gaaccacagg tgtacacct gcccccaccc cgggaggaga tgaccaagaa ccaggtcagc 1140
ctgacctgcc tgggtcaaagg cttctacccc agcgacatcg ccgtggagtg ggagagcaat 1200
gggcagccgg agaacaacta caagaccaca cctcccatgc tggactccga cggctccttc 1260
ttcctctaca gcaagctcac cgtggacaag agcaggtggc agcaggggaa cgtcttctca 1320
tgctccgtga tgcattgagg tctgcacaac cactacacgc agaagagcct ctccctgtct 1380
ccgggtaaat ga                                     1392

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<210> 56
<211> 708
<212> DNA
<213> Homo sapiens

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<400> 56
atggaaaccc cagcgcagct tctcttcttc ctgctactct ggctcccaga taccaccgga 60
gaaatttgtg tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 120
ctctcctgca gggccagtc gagtattagc agcagcttct tagcctggta ccagcagaga 180
cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac tggcatccca 240
gacaggttca gtggcagtg gtctgggaca gacttcaact tcaccatcag cagactggag 300
cctgaagatt ttgcagtgtg ttactgtcag cagtattggt cctcaccctg gacgttcggc 360
caagggacca aggtggaaat caaacgaact gtggctgcac catctgtctt catcttcccc 420
ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgctgtgt gaataaactc 480
tatcccagag aggccaaagt acagtggaa ggtgataacg cctccaatc gggtaactcc 540
caggagagtg tcacagagca ggacagcaag gacagcacct acagcctcag cagcaccctg 600
acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt caccatcag 660
ggcctgagct cgcccgtcac aaagagcttc aacaggggag agtggttag 708

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<210> 57
<211> 1395
<212> DNA
<213> Homo sapiens

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<400> 57
atggagtttg ggctgagctg ggttttcttc gttgctcttt taagaggtgt ccagtgtcag 60
gtgcagctgg tggagtctgg gggaggcgtg gtccagcctg ggaggtccct gagactctcc 120
tgtacagcgt ctggattcac cttcagtaac tatggcatgc actgggtccg ccagggtcca 180
ggcaagggggc tggagtgggt ggcagttata tggatgatg gaagtaataa acactatgga 240
gactccgtga agggccgatt caccatctcc agtgacaatt ccaagaacac gctgtatctg 300
caaatgaaca gcctgagagc cgaggacacg gctgtgtatt actgtgcgag aggagagaga 360
ctggggctct actttgacta ctggggccag ggaacccctg tcaccgtctc ctcagcctcc 420
accaagggcc catcgtgtct cccctgtggc cctgtctcca ggagcacctc cgagagcaca 480
gcggccctgg gctgctgtgt caaggactac ttccccgaac cgggtgacgg gtctgtggaac 540
tcaggcgctc tgaccagcgg cgtgcacacc ttcccagctg tcctacagtc ctcaggactc 600
tactccctca gcagcgtgt gaccgtgccc tccagcaact tcggcaccca gacctacacc 660
tgcaacgtag atcacaagcc cagcaacacc aaggtggaca agacagttga gcgcaaatgt 720
tgtgtcgagt gcccaccgtg cccagcacca cctgtggcag gaccgtcagt cttcctcttc 780
ccccaaaaac ccaaggacac cctcatgate tcccggaccc ctgaggtcac gtgcgtggtg 840
gtggacgtga gccacgaaga ccccgaggtc cagttcaact ggtacgtgga cggcgtggag 900
gtgcataatg ccaagacaaa gccacgggag gagcagttca acagcacgtt ccgtgtggtg 960
agcgtctctc ccgttgtgca ccaggactgg ctgaacggca aggagtacaa gtgcaagggtc 1020
tccaacaaag gcctccagc ccccatcgag aaaaccatct ccaaaaccaa agggcagccc 1080
cgagaaccac aggtgtacac cctgccccca tcccgggagg agatgaccaa gaaccaggtc 1140
agcctgacct gcctgggtcaa aggcttctac cccagcgaca tcgcctgga gtgggagagc 1200
aatgggcagc cggagaacaa ctacaagacc acacctccca tgctggactc cgacggctcc 1260
ttcttctctc acagcaagct caccgtggac aagagcaggt ggcagcaggg gaacgtcttc 1320

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tcattgctccg tgatgcatga ggctctgcac aaccactaca cgcagaagag cctctccctg 1380
tctccgggta aatga 1395

<210> 58
<211> 702
<212> DNA
<213> Homo sapiens

<400> 58
atggaaaccc cagcgagct tctcttctc ctgctactct ggctcccaga taccaccgga 60
gaaattgtgt tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 120
ctctcctgca ggaccagtgt tagcagcagt tacttagcct ggtaccagca gaaacctggc 180
caggctccca ggctcctcat ctatggtgca tccagcaggg cactggcat cccagacagg 240
ttcagtggca gtgggtctgg gacagacttc actctcacca tcagcagact ggagcctgaa 300
gattttgcag tctattactg tcagcagtat ggcattctac ccttcacttt cggcggaggg 360
accaaggtgg agatcaagcg aactgtggct gcaccatctg tcttcatctt cccgccatct 420
gatgagcagt tgaaatctgg aactgcctct gttgtgtgcc tgctgaataa cttctatccc 480
agagaggcca aagtacagt gaaggtggat aacgccctcc aatcgggtaa ctcccaggag 540
agtgtcacag agcaggacag caaggacagc acctacagcc tcagcagcac cctgacgctg 600
agcaaagcag actacgagaa acacaaagtc tacgcctgcg aagtcacca tcagggcctg 660
agctcgcccc tcacaaagag cttcaacagg ggagagtgtt ag 702

<210> 59
<211> 1392
<212> DNA
<213> Homo sapiens

<400> 59
atggagtttg ggctgagctg ggttttctc gttgctcttt taagaggtgt ccagtgtcag 60
gtgcagctgg tggagtctgg gggaggcgtg gtgcagcctg ggaggtccct gagactctcc 120
tgtacagcgt ctggattcac cttcagtagt tatggcatgc actgggtccg ccaggtccca 180
ggcaagggggc tggagtgggt ggcaagtata tggtagatg gaagcaataa aactatgca 240
gactccgcga agggccgatt caccatctcc agagacaatt ccaagaacac gctgtatctg 300
caaatagaaca gcctgagagc cgaggacacg gctgtgtatt actgtgcgag agccggactg 360
ctgggttact ttgactactg gggccaggga accctggtca cgtctcctc agcctccacc 420
aagggcccat cggctcttccc cctggcgccc tgctccagga gcacctccga gagcacagcg 480
gccctgggct gcctgggtcaa ggactacttc cccgaaccgg tgacgggtgc gtggaactca 540
ggcgtcttga ccagcggcgt gcacaccttc ccagctgtcc tacagtctc aggactctac 600
tccctcagca gcgtggtgac cgtgccctcc agcaacttcg gcacccagac ctacacctgc 660
aacgtagatc acaagcccag caacaccaag gtggacaaga cagttgagcg caaatgttgt 720
gtcagagtgc caccgtgccc agcaccacct gtggcaggac cgtcagttt cctcttcccc 780
ccaaaaccca aggacaccct catgatctcc cggacccctg aggtcacgtg cgtggtggtg 840
gacgtgagcc acgaagaccc cgaggtccag ttcaactggt acgtggacgg cgtggagggtg 900
cataatgcca agacaaagcc acgggaggag cagttcaaca gcacgttccg tgtggtcagc 960
gtcctcaccg ttgtgcacca ggactggctg aacggcaagg agtacaagt caaggtctcc 1020
aacaaaggcc tcccagcccc catcgagaaa accatctcca aaaccaaagg gcagccccga 1080
gaaccacagg tgtacaccct gccccatcc cgggaggaga tgaccaagaa ccaggtcagc 1140
ctgacctgcc tgggtcaaagg cttctacccc agcgacatcg ccgtggagtg ggagagcaat 1200
gggcagccgg agaacaacta caagaccaca cctcccatgc tggactccga cggctccttc 1260
ttcctctaca gcaagctcac cgtggacaag agcaggtggc agcaggggaa cgtcttctca 1320
tgctccgtga tgcattgaggc tctgcacaac cactacacgc agaagagcct ctccctgtct 1380
ccgggtaaat ga 1392

<210> 60
<211> 705
<212> DNA
<213> Homo sapiens

<400> 60

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atggaaaccc cagcgcagct tctcttctct ctgtactctt ggctcccaga taccaccgga 60
gaaattgtgt tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 120
ctctcctgta gggccagtca aagtgttagc agctacttag cctggtacca acagaaacct 180
ggccaggctc ccaggcccct catctatggt gtatccagca gggccactgg catcccagac 240
aggttcagtg gcagtgggtc tgggacagac ttactctca ccatcagcag actggagcct 300
gaagattttg cagtgtatta ctgtcagcag tatggtatct caccattcac ttctggccct 360
gggaccaaag tggatatcaa acgaactgtg gctgcacat ctgtcttcat cttcccacca 420
tctgatgagc agttgaaatc tggaaactgcc tctgttgtgt gcctgctgaa taacttctat 480
cccagagagg ccaaagtaca gtggaagggt gataacgccc tccaatcggg taactcccag 540
gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 600
ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 660
ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gttag 705

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<210> 61
<211> 1413
<212> DNA
<213> Homo sapiens

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<400> 61
atggagtttg ggctgagctg ggttttctct gttgctcttt taagaggtgt ccagtgtcag 60
gtgcagctgg tggagtctgg gggaggcgtg gtccagcctg ggaggtccct gagactctcc 120
tgtgcagcgt ctggattcac cttcagtagc tatggcatgc actgggtccg ccaggctcca 180
ggcaaggggc tggagtgggt ggcagttata tggatgatg gaagtaataa atactatgca 240
gactccgtga agggccgatt caccatctcc agagacaatt ccaagaacac gctgtatctg 300
caaatgaaca gcctgagagc cgaggacacg gctgtgtatt actgtgcgag agatccgagg 360
ggagctaccc ttactacta ctactacggt atggacgtct ggggccaaag gaccacggtc 420
accgtctcct cagcctccac caagggccca tcggtcttcc ccctggcgcc ctgctccagg 480
agcacctccg agagcacagc ggccctgggc tgctgtgtca aggactactt cccgaaccg 540
gtgacggtgt cgtggaactc aggcgtctcg accagcgcg tgacacactt cccagctgtc 600
ctacagtcc taggactcta ctccctcagc agcgtggtga ccgtgccctc cagcaacttc 660
ggcaccacga cctacacctg caacgtatag cacaagccca gcaacaccaa ggtggacaag 720
acagttgagc gcaaagtgtg tgtcagtgcc ccaccgtgcc cagcaccacc tgtggcagga 780
ccgtcagttc tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggaccct 840
gaggtcacgt gcgtgggtgg ggacgtgagc cacgaagacc ccgaggtcca gttcaactgg 900
tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cacgggagga gcagttcaac 960
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gagtacaagt gcaaggctct caacaaagc ctcccagccc ccacgcagaa aaccatctcc 1080
aaaaccaaag ggcagccccc agaaccacag gtgtacaccc tgcccccatc ccggaggag 1140
atgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctaccc cagcgacatc 1200
gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac acctcccatg 1260
ctggactccg acggctcctt cttcctctac agcaagctca ccgtggacaa gagcaggtgg 1320
cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacacg 1380
cagaagagcc tctccctgtc tccgggtaaa tga 1413

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<210> 62
<211> 714
<212> DNA
<213> Homo sapiens

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<400> 62
atggacatga ggggtcccgc tcagctcctg gggctcctgc tactctgggt ccgaggtgcc 60
agatgtgaca tccagatgac ccagctctca tctccctgt ctgcatctgt aggagacaga 120
gtcaccatca cttgccgggc aagtcagagc attaacagct atttagattg gtatcagcag 180
aaaccaggga aagccccaa actcctgac tatgctgcat ccagtttgca aagtggggtc 240
ccatcaaggt tcagtggcag tggatctggg acagatttca ctctcaccat cagcagctctg 300
caacctgaag attttgcaac ttactactgt caacagtatt acagtactcc attcactttc 360
ggccctggga ccaaagtgga aatcaaacga actgtggctg caccatctgt cttcatcttc 420
ccgccatctg atgagcagtt gaaatctgga actgcctctg ttgtgtgcct gctgaataac 480
ttctatccca gagaggccaa agtacagtgg aagggtgata acgccctcca atcgggtaac 540
tcccaggaga gtgtcacaga gcaggacagc aaggacagca cctacagcct cagcagcacc 600

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ctgacgctga gcaaagcaga ctacgagaaa cacaaagtct acgcctgcga agtcacccat 660
 cagggcctga gctcgcccgt cacaaagagc ttcaacaggg gagagtgtta gtga 714

<210> 63
 <211> 463
 <212> PRT
 <213> Homo sapiens

<400> 63
 Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
 1 5 10 15
 Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
 20 25 30
 Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Phe
 35 40 45
 Ser Ser His Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60
 Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Arg Asn Lys Tyr Tyr Ala
 65 70 75 80
 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
 85 90 95
 Thr Leu Phe Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Arg Gly Gly His Phe Gly Pro Phe Asp Tyr Trp Gly
 115 120 125
 Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
 130 135 140
 Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
 145 150 155 160
 Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 165 170 175
 Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
 180 185 190
 Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
 195 200 205
 Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His
 210 215 220
 Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys
 225 230 235 240
 Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
 245 250 255
 Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
 260 265 270
 Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu

275						280					285				
Val	Gln	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys
290						295					300				
Thr	Lys	Pro	Arg	Glu	Glu	Gln	Phe	Asn	Ser	Thr	Phe	Arg	Val	Val	Ser
305				310						315					320
Val	Leu	Thr	Val	Val	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys
				325					330					335	
Cys	Lys	Val	Ser	Asn	Lys	Gly	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile
			340					345					350		
Ser	Lys	Thr	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro
		355					360					365			
Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu
	370						375					380			
Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn
385					390					395					400
Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Met	Leu	Asp	Ser
				405					410					415	
Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg
			420					425					430		
Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu
		435					440					445			
His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys	
	450					455					460				

<210> 64
 <211> 463
 <212> PRT
 <213> Homo sapiens

<400> 64															
Met	Glu	Phe	Gly	Leu	Ser	Trp	Val	Phe	Leu	Val	Ala	Leu	Leu	Arg	Gly
1				5					10					15	
Val	Gln	Cys	Gln	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln
			20					25					30		
Pro	Gly	Arg	Ser	Leu	Arg	Leu	Ser	Cys	Val	Ala	Ser	Gly	Phe	Thr	Phe
		35					40					45			
Ser	Ser	His	Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu
	50					55					60				
Glu	Trp	Val	Ala	Val	Ile	Trp	Tyr	Asp	Gly	Arg	Asn	Lys	Tyr	Tyr	Ala
65					70					75					80
Asp	Ser	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn
				85					90					95	
Thr	Leu	Phe	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val
			100					105					110		

Tyr Tyr Cys Ala Arg Gly Gly His Phe Gly Pro Phe Asp Tyr Trp Gly
 115 120 125
 Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
 130 135 140
 Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
 145 150 155 160
 Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 165 170 175
 Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
 180 185 190
 Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
 195 200 205
 Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His
 210 215 220
 Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys
 225 230 235 240
 Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
 245 250 255
 Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
 260 265 270
 Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
 275 280 285
 Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
 290 295 300
 Thr Lys Pro Arg Glu Glu Gln Phe Gln Ser Thr Phe Arg Val Val Ser
 305 310 315 320
 Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
 325 330 335
 Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile
 340 345 350
 Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
 355 360 365
 Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu
 370 375 380
 Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
 385 390 395 400
 Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser
 405 410 415
 Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
 420 425 430
 Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu

435 440 445
 His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 450 455 460

 <210> 65
 <211> 235
 <212> PRT
 <213> Homo sapiens

 <400> 65
 Met Glu Thr Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
 1 5 10 15
 Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser
 20 25 30
 Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
 35 40 45
 Ile Ser Ser Ser Phe Leu Ala Trp Tyr Gln Gln Arg Pro Gly Gln Ala
 50 55 60
 Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro
 65 70 75 80
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
 85 90 95
 Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr
 100 105 110
 Gly Thr Ser Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 115 120 125
 Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
 130 135 140
 Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
 145 150 155 160
 Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
 165 170 175
 Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
 180 185 190
 Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
 195 200 205
 Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
 210 215 220
 Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 225 230 235

<210> 66
 <211> 464
 <212> PRT
 <213> Homo sapiens

<400> 66

Met	Glu	Phe	Gly	Leu	Ser	Trp	Val	Phe	Leu	Val	Ala	Leu	Leu	Arg	Gly	1	5	10	15
Val	Gln	Cys	Gln	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	20	25	30	
Pro	Gly	Arg	Ser	Leu	Arg	Leu	Ser	Cys	Thr	Ala	Ser	Gly	Phe	Thr	Phe	35	40	45	
Ser	Asn	Tyr	Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	50	55	60	
Glu	Trp	Val	Ala	Val	Ile	Trp	Tyr	Asp	Gly	Ser	Asn	Lys	His	Tyr	Gly	65	70	75	80
Asp	Ser	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Ser	Asp	Asn	Ser	Lys	Asn	85	90	95	
Thr	Leu	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	100	105	110	
Tyr	Tyr	Cys	Ala	Arg	Gly	Glu	Arg	Leu	Gly	Ser	Tyr	Phe	Asp	Tyr	Trp	115	120	125	
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	130	135	140	
Ser	Val	Phe	Pro	Leu	Ala	Pro	Cys	Ser	Arg	Ser	Thr	Ser	Glu	Ser	Thr	145	150	155	160
Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	165	170	175	
Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	180	185	190	
Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	195	200	205	
Val	Pro	Ser	Ser	Asn	Phe	Gly	Thr	Gln	Thr	Tyr	Thr	Cys	Asn	Val	Asp	210	215	220	
His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Thr	Val	Glu	Arg	Lys	Cys	225	230	235	240
Cys	Val	Glu	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Pro	Val	Ala	Gly	Pro	Ser	245	250	255	
Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	260	265	270	
Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	275	280	285	
Glu	Val	Gln	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	290	295	300	
Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Phe	Asn	Ser	Thr	Phe	Arg	Val	Val	305	310	315	320

Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
 325 330 335
 Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr
 340 345 350
 Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
 355 360 365
 Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
 370 375 380
 Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
 385 390 395 400
 Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp
 405 410 415
 Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
 420 425 430
 Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
 435 440 445
 Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 450 455 460

<210> 67
 <211> 233
 <212> PRT
 <213> Homo sapiens

<400> 67
 Met Glu Thr Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
 1 5 10 15
 Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser
 20 25 30
 Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Thr Ser Val Ser
 35 40 45
 Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg
 50 55 60
 Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg
 65 70 75 80
 Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg
 85 90 95
 Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ile
 100 105 110
 Ser Pro Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr
 115 120 125
 Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu
 130 135 140
 Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro

```

145                      150                      155                      160
Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly
      165                      170                      175
Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr
      180                      185                      190
Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His
      195                      200                      205
Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val
      210                      215                      220
Thr Lys Ser Phe Asn Arg Gly Glu Cys
225                      230

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<210> 68
<211> 463
<212> PRT
<213> Homo sapiens

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<400> 68
Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
  1      5      10      15
Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Glu
      20      25      30
Pro Gly Arg Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Phe Thr Phe
      35      40      45
Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
      50      55      60
Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys His Tyr Ala
      65      70      75      80
Asp Ser Ala Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
      85      90      95
Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
      100      105      110
Tyr Tyr Cys Ala Arg Ala Gly Leu Leu Gly Tyr Phe Asp Tyr Trp Gly
      115      120      125
Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
      130      135      140
Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
      145      150      155      160
Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
      165      170      175
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
      180      185      190
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
      195      200      205

```

```

Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His
210                215                220

Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys
225                230                235                240

Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
                245                250                255

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
                260                265                270

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
                275                280                285

Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
290                295                300

Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser
305                310                315                320

Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
                325                330                335

Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile
                340                345                350

Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
                355                360                365

Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu
                370                375                380

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
385                390                395                400

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser
                405                410                415

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
                420                425                430

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
                435                440                445

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
450                455                460

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<210> 69

<211> 234

<212> PRT

<213> Homo sapiens

<400> 69

```

Met Glu Thr Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
  1              5              10              15

```

```

Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser
      20              25              30

```


Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
 35 40 45
 Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
 50 55 60
 Arg Pro Leu Ile Tyr Gly Val Ser Ser Arg Ala Thr Gly Ile Pro Asp
 65 70 75 80
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 85 90 95
 Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly
 100 105 110
 Ile Ser Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg
 115 120 125
 Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
 130 135 140
 Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
 145 150 155 160
 Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
 165 170 175
 Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
 180 185 190
 Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
 195 200 205
 His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
 210 215 220
 Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 225 230

<210> 70

<211> 451

<212> PRT

<213> Homo sapiens

<400> 70

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys

85										90					95				
Ala	Arg	Asp	Pro	Arg	Gly	Ala	Thr	Leu	Tyr	Tyr	Tyr	Tyr	Tyr	Tyr	Gly	Met			
			100					105							110				
Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr				
		115					120					125							
Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Cys	Ser	Arg	Ser	Thr	Ser				
	130					135					140								
Glu	Ser	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu				
145					150					155					160				
Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His				
				165					170					175					
Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser				
			180					185					190						
Val	Val	Thr	Val	Pro	Ser	Ser	Asn	Phe	Gly	Thr	Gln	Thr	Tyr	Thr	Cys				
		195					200					205							
Asn	Val	Asp	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Thr	Val	Glu				
	210					215					220								
Arg	Lys	Cys	Cys	Val	Glu	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Pro	Val	Ala				
225					230						235				240				
Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met				
				245					250					255					
Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His				
			260					265					270						
Glu	Asp	Pro	Glu	Val	Gln	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val				
		275					280					285							
His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Phe	Asn	Ser	Thr	Phe				
	290					295					300								
Arg	Val	Val	Ser	Val	Leu	Thr	Val	Val	His	Gln	Asp	Trp	Leu	Asn	Gly				
305					310						315				320				
Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Gly	Leu	Pro	Ala	Pro	Ile				
				325					330					335					
Glu	Lys	Thr	Ile	Ser	Lys	Thr	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val				
			340					345					350						
Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln	Val	Ser				
		355					360					365							
Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu				
						375					380								
Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro				
385					390						395				400				
Met	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val				
				405					410					415					

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
 420 425 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
 435 440 445

Pro Gly Lys
 450

<210> 71
 <211> 214
 <212> PRT
 <213> Homo sapiens

<400> 71
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Asn Ser Tyr
 20 25 30

Leu Asp Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr Pro Phe
 85 90 95

Thr Phe Gly Pro Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
 100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
 115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
 130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
 145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
 165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
 180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
 195 200 205

Phe Asn Arg Gly Glu Cys
 210

<210> 72
 <211> 89
 <212> PRT

<213> Homo sapiens

<400> 72

```

Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser
 1              5              10              15
Gly Phe Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro
              20              25              30
Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn
              35              40              45
Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
              50              55              60
Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
 65              70              75              80
Asp Thr Ala Val Tyr Tyr Cys Ala Arg
              85

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<210> 73

<211> 169

<212> PRT

<213> Homo sapiens

<400> 73

```

Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser
 1              5              10              15
Gly Phe Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro
              20              25              30
Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn
              35              40              45
Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
              50              55              60
Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
 65              70              75              80
Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Ala Arg Ile Ile Thr Pro
              85              90              95
Cys Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala
              100              105              110
Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser
              115              120              125
Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
              130              135              140
Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly
145              150              155              160
Val His Thr Phe Pro Ala Val Leu Gln
              165

```

<210> 74
 <211> 167
 <212> PRT
 <213> Homo sapiens

<400> 74
 Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser
 1 5 10 15
 Gly Phe Thr Phe Ser Ser His Gly Met His Trp Val Arg Gln Ala Pro
 20 25 30
 Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Arg Asn
 35 40 45
 Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
 50 55 60
 Asn Ser Lys Asn Thr Leu Phe Leu Gln Met Asn Ser Leu Arg Ala Glu
 65 70 75 80
 Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Gly His Phe Gly Pro Phe
 85 90 95
 Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
 100 105 110
 Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
 115 120 125
 Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
 130 135 140
 Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
 145 150 155 160
 Thr Phe Pro Ala Val Leu Gln
 165

<210> 75
 <211> 166
 <212> PRT
 <213> Homo sapiens

<400> 75
 Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Thr Ala Ser
 1 5 10 15
 Gly Phe Thr Phe Ser Asn Tyr Gly Met His Trp Val Arg Gln Ala Pro
 20 25 30
 Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn
 35 40 45
 Lys His Tyr Gly Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Ser Asp
 50 55 60
 Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
 65 70 75 80
 Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Glu Arg Leu Gly Ser Tyr

				85						90						95			
Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser				
			100					105						110					
Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Cys	Ser	Arg	Ser	Thr				
		115					120					125							
Ser	Glu	Ser	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro				
		130				135					140								
Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val				
145					150					155					160				
His	Thr	Phe	Pro	Ala	Val														
				165															

<210> 76
 <211> 167
 <212> PRT
 <213> Homo sapiens

Gly	Val	Val	Gln	Pro	Gly	Arg	Ser	Leu	Arg	Leu	Ser	Cys	Val	Ala	Ser				
1				5				10						15					
Gly	Phe	Ile	Phe	Ser	Ser	His	Gly	Ile	His	Trp	Val	Arg	Gln	Ala	Pro				
			20				25						30						
Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Val	Ile	Trp	Tyr	Asp	Gly	Arg	Asn				
		35				40					45								
Lys	Asp	Tyr	Ala	Asp	Ser	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp				
	50				55					60									
Asn	Ser	Lys	Asn	Thr	Leu	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu				
65				70				75							80				
Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Ala	Pro	Leu	Gly	Pro	Leu				
			85				90						95						
Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr				
		100					105						110						
Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Cys	Ser	Arg	Ser	Thr	Ser				
		115					120					125							
Glu	Ser	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu				
	130					135					140								
Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His				
145				150				155							160				
Thr	Phe	Pro	Ala	Val	Leu	Gln													
				165															

<210> 77
 <211> 153
 <212> PRT
 <213> Homo sapiens

<400> 77

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 1 5 10 15

Ser Ser His Gly Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 20 25 30

Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Arg Asn Lys Asp Tyr Ala
 35 40 45

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
 50 55 60

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
 65 70 75 80

Tyr Tyr Cys Ala Arg Val Ala Pro Leu Gly Pro Leu Asp Tyr Trp Gly
 85 90 95

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
 100 105 110

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
 115 120 125

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 130 135 140

Ser Trp Asn Ser Gly Ala Leu Thr Ser
 145 150

<210> 78

<211> 163

<212> PRT

<213> Homo sapiens

<400> 78

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 1 5 10 15

Ser Ser His Gly Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 20 25 30

Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Arg Asn Lys Asp Tyr Ala
 35 40 45

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Lys
 50 55 60

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
 65 70 75 80

Tyr Tyr Cys Ala Arg Val Ala Pro Leu Gly Pro Leu Asp Tyr Trp Gly
 85 90 95

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
 100 105 110

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
 115 120 125

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 130 135 140

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
 145 150 155 160

Val Leu Gln

<210> 79

<211> 138

<212> PRT

<213> Homo sapiens

<400> 79

Gly Gly Val Val Glu Pro Gly Arg Ser Leu Arg Leu Ser Cys Thr Ala
 1 5 10 15

Ser Gly Phe Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala
 20 25 30

Pro Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser
 35 40 45

Asn Lys His Tyr Ala Asp Ser Ala Lys Gly Arg Phe Thr Ile Ser Arg
 50 55 60

Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala
 65 70 75 80

Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ala Gly Leu Leu Gly Tyr
 85 90 95

Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
 100 105 110

Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr
 115 120 125

Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu
 130 135

<210> 80

<211> 167

<212> PRT

<213> Homo sapiens

<400> 80

Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser
 1 5 10 15

Gly Phe Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro
 20 25 30

Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn
 35 40 45

Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
 50 55 60


```

Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
 65              70              75              80
Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asp Pro Arg Gly Ala Thr Leu
              85              90              95
Tyr Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val
      100              105              110
Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala
      115              120              125
Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu
      130              135              140
Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly
145              150              155              160
Ala Leu Thr Ser Gly Val His
              165

```

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<210> 81
<211> 150
<212> PRT
<213> Homo sapiens

```

```

<400> 81
Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser
 1              5              10              15
Gly Phe Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro
              20              25              30
Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser His
      35              40              45
Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
      50              55              60
Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
 65              70              75              80
Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Ala Val Val Val Pro Ala
              85              90              95
Ala Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala
      100              105              110
Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser
      115              120              125
Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
      130              135              140
Pro Glu Pro Val Thr Val
145              150

```

```

<210> 82
<211> 146
<212> PRT

```

<213> Homo sapiens

<400> 82

```

Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
  1           5           10           15
Phe Thr Phe Ser Ser Cys Gly Met His Trp Val Arg Gln Ala Pro Gly
          20           25           30
Lys Gly Leu Glu Trp Val Ala Val Ile Trp Ser Asp Gly Ser His Lys
          35           40           45
Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
          50           55           60
Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
          65           70           75           80
Thr Ala Val Tyr Tyr Cys Ala Arg Gly Thr Met Ile Val Val Gly Thr
          85           90           95
Leu Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
          100          105          110
Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr
          115          120          125
Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
          130          135          140
Glu Pro
145

```

<210> 83

<211> 171

<212> PRT

<213> Homo sapiens

<400> 83

```

Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser
  1           5           10           15
Gly Phe Thr Phe Ser Ser Tyr Gly Val His Trp Val Arg Gln Ala Pro
          20           25           30
Gly Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn
          35           40           45
Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
          50           55           60
Asn Ser Lys Ser Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
          65           70           75           80
Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Tyr Tyr Asp Phe Trp
          85           90           95
Ser Gly Arg Gly Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
          100          105          110
Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro

```

115 120 125
 Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val
 130 135 140
 Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
 145 150 155 160
 Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
 165 170

<210> 84
 <211> 163
 <212> PRT
 <213> Homo sapiens

<400> 84
 Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 1 5 10 15
 Thr Phe Ser Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
 20 25 30
 Gly Leu Glu Trp Val Val Val Ile Trp His Asp Gly Asn Asn Lys Tyr
 35 40 45
 Tyr Ala Glu Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
 50 55 60
 Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
 65 70 75 80
 Ala Val Tyr Tyr Cys Ala Arg Asp Gln Gly Thr Gly Trp Tyr Gly Gly
 85 90 95
 Phe Asp Phe Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
 100 105 110
 Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr
 115 120 125
 Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
 130 135 140
 Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
 145 150 155 160
 His Thr Phe

<210> 85
 <211> 76
 <212> PRT
 <213> Homo sapiens

<400> 85
 Val Ser Gly Gly Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile
 1 5 10 15
 Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr
 20 25 30

Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile
35 40 45

Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val
50 55 60

Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
65 70 75

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<210> 86
<211> 172
<212> PRT
<213> Homo sapiens
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<400> 86
Ser Gly Pro Gly Leu Val Lys Pro Ser Gln Ile Leu Ser Leu Thr Cys
1 5 10 15

Thr Val Ser Gly Gly Ser Ile Ser Ser Gly Gly His Tyr Trp Ser Trp
20 25 30

Ile Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr
35 40 45

Tyr Ile Gly Asn Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr
50 55 60

Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser
65 70 75 80

Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Gly
85 90 95

Asp Tyr Tyr Gly Ile Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
100 105 110

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys
115 120 125

Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys
130 135 140

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
145 150 155 160

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
165 170

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<210> 87
<211> 96
<212> PRT
<213> Homo sapiens
```

<400> 87
Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser
20 25 30

Tyr	Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu
		35					40					45			
Ile	Tyr	Gly	Ala	Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser
	50					55					60				
Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu
65					70					75					80
Pro	Glu	Asp	Phe	Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro
				85					90					95	

```
<210> 88
<211> 141
<212> PRT
<213> Homo sapiens
```

```

<400> 88
Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu
  1          5          10          15
Ser Cys Arg Ala Ser Gln Ser Ile Ser Ser Ser Phe Leu Ala Trp Tyr
          20          25          30
Gln Gln Arg Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser
          35          40          45
Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly
          50          55          60
Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala
  65          70          75          80
Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Trp Thr Phe Gly Gln
          85          90          95
Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe
          100          105          110
Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val
          115          120          125
Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
          130          135          140

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<210> 89
<211> 141
<212> PRT
<213> Homo sapiens
```

<400> 89
Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu
1 5 10 15
Ser Cys Arg Thr Ser Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln Gln
20 25 30
Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg
35 40 45

Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
50 55 60

Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr
65 70 75 80

Tyr Cys Gln Gln Tyr Gly Ile Ser Pro Phe Thr Phe Gly Gly Gly Thr
85 90 95

Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe
100 105 110

Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys
115 120 125

Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln
130 135 140

<210> 90
<211> 139
<212> PRT
<213> Homo sapiens

<400> 90
Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg
1 5 10 15

Ala Ser Gln Ser Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro
20 25 30

Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr
35 40 45

Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
50 55 60

Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys
65 70 75 80

Gln Gln Tyr Gly Arg Ser Pro Phe Thr Phe Gly Pro Gly Thr Lys Val
85 90 95

Asp Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro
100 105 110

Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu
115 120 125

Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln
130 135

<210> 91
<211> 142
<212> PRT
<213> Homo sapiens

<400> 91
Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu
1 5 10 15

Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr Leu Ala Trp Tyr Gln
 20 25 30
 Gln Lys Pro Gly Gln Ala Pro Arg Pro Leu Ile Tyr Gly Val Ser Ser
 35 40 45
 Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr
 50 55 60
 Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val
 65 70 75 80
 Tyr Tyr Cys Gln Gln Tyr Gly Ile Ser Pro Phe Thr Phe Gly Pro Gly
 85 90 95
 Thr Lys Val Asp Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile
 100 105 110
 Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val
 115 120 125
 Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln
 130 135 140

<210> 92
 <211> 142
 <212> PRT
 <213> Homo sapiens

<400> 92
 Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser
 1 5 10 15
 Cys Arg Ala Ser Gln Ser Ile Ser Ser Asn Phe Leu Ala Trp Tyr Gln
 20 25 30
 Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Arg Pro Ser Ser
 35 40 45
 Arg Ala Thr Gly Ile Pro Asp Ser Phe Ser Gly Ser Gly Ser Gly Thr
 50 55 60
 Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Leu
 65 70 75 80
 Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Phe Thr Phe Gly Pro Gly
 85 90 95
 Thr Lys Val Asp Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile
 100 105 110
 Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val
 115 120 125
 Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln
 130 135 140

<210> 93
 <211> 146

<212> PRT

<213> Homo sapiens

<400> 93

Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu
 1 5 10 15
 Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr Leu Ala Trp Tyr Gln
 20 25 30
 Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser
 35 40 45
 Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr
 50 55 60
 Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val
 65 70 75 80
 Tyr Tyr Cys Gln Gln Tyr Gly Arg Ser Pro Phe Thr Phe Gly Pro Gly
 85 90 95
 Thr Lys Val Asp Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile
 100 105 110
 Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val
 115 120 125
 Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys
 130 135 140
 Gly Gly
 145

<210> 94

<211> 95

<212> PRT

<213> Homo sapiens

<400> 94

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
 20 25 30
 Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro
 85 90 95

<210> 95

<211> 152

<212> PRT
 <213> Homo sapiens

<400> 95

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Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile
 1             5             10             15

Thr Cys Arg Ala Ser Gln Ser Ile Asn Thr Tyr Leu Ile Trp Tyr Gln
          20             25             30

Gln Lys Pro Gly Lys Ala Pro Asn Phe Leu Ile Ser Ala Thr Ser Ile
          35             40             45

Leu Gln Ser Gly Val Pro Ser Arg Phe Arg Gly Ser Gly Ser Gly Thr
 50             55             60

Asn Phe Thr Leu Thr Ile Asn Ser Leu His Pro Glu Asp Phe Ala Thr
 65             70             75             80

Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Phe Thr Phe Gly Pro Gly
          85             90             95

Thr Lys Val Asp Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile
          100            105            110

Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val
          115            120            125

Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys
          130            135            140

Val Asp Asn Ala Leu Gln Ser Gly
          145            150

```

<210> 96
 <211> 139
 <212> PRT
 <213> Homo sapiens

<400> 96

```

Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys
 1             5             10             15

Arg Ala Ser Gln Ser Ile Asn Ser Tyr Leu Asp Trp Tyr Gln Gln Lys
          20             25             30

Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Gln
          35             40             45

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
          50             55             60

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
          65             70             75             80

Cys Gln Gln Tyr Tyr Ser Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys
          85             90             95

Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
          100            105            110

```

Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu
 115 120 125

Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val
 130 135

<210> 97
 <211> 134
 <212> PRT
 <213> Homo sapiens

<400> 97
 Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
 1 5 10 15
 Ile Thr Cys Arg Ala Ser Gln Asn Ile Ser Arg Tyr Leu Asn Trp Tyr
 20 25 30
 Gln Gln Lys Pro Gly Lys Ala Pro Lys Phe Leu Ile Tyr Val Ala Ser
 35 40 45
 Ile Leu Gln Ser Gly Val Pro Ser Gly Phe Ser Ala Ser Gly Ser Gly
 50 55 60
 Pro Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 65 70 75 80
 Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Phe Thr Phe Gly Pro
 85 90 95
 Gly Thr Lys Val Asp Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe
 100 105 110
 Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val
 115 120 125
 Val Cys Leu Leu Asn Asn
 130

<210> 98
 <211> 150
 <212> PRT
 <213> Homo sapiens

<400> 98
 Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
 1 5 10 15
 Ile Thr Cys Arg Ala Ser Gln Ser Ile Cys Asn Tyr Leu Asn Trp Tyr
 20 25 30
 Gln Gln Lys Pro Gly Lys Ala Pro Arg Val Leu Ile Tyr Ala Ala Ser
 35 40 45
 Ser Leu Gln Gly Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
 50 55 60
 Ile Asp Cys Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
 65 70 75 80

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ile Thr Pro Phe Thr Phe Gly Pro
 85 90 95
 Gly Thr Arg Val Asp Ile Glu Arg Thr Val Ala Ala Pro Ser Val Phe
 100 105 110
 Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val
 115 120 125
 Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp
 130 135 140
 Lys Val Asp Asn Ala Tyr
 145 150

<210> 99
 <211> 96
 <212> PRT
 <213> Homo sapiens

<400> 99
 Glu Ile Val Leu Thr Gln Ser Pro Asp Phe Gln Ser Val Thr Pro Lys
 1 5 10 15
 Glu Lys Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Gly Ser Ser
 20 25 30
 Leu His Trp Tyr Gln Gln Lys Pro Asp Gln Ser Pro Lys Leu Leu Ile
 35 40 45
 Lys Tyr Ala Ser Gln Ser Phe Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Glu Ala
 65 70 75 80
 Glu Asp Ala Ala Thr Tyr Tyr Cys His Gln Ser Ser Ser Leu Pro Gln
 85 90 95

<210> 100
 <211> 364
 <212> PRT
 <213> Homo sapiens

<400> 100
 Met Gly Val Leu Leu Thr Gln Arg Thr Leu Leu Ser Leu Val Leu Ala
 1 5 10 15
 Leu Leu Phe Pro Ser Met Ala Ser Met Ala Met His Val Ala Gln Pro
 20 25 30
 Ala Val Val Leu Ala Ser Ser Arg Gly Ile Ala Ser Phe Val Cys Glu
 35 40 45
 Tyr Ala Ser Pro Gly Lys Ala Thr Glu Val Arg Val Thr Val Leu Arg
 50 55 60
 Gln Ala Asp Ser Gln Val Thr Glu Val Cys Ala Ala Thr Tyr Met Met
 65 70 75 80

Gly Asn Glu Leu Thr Phe Leu Asp Asp Ser Ile Cys Thr Gly Thr Ser
 85 90 95
 Ser Gly Asn Gln Val Asn Leu Thr Ile Gln Gly Leu Arg Ala Met Asp
 100 105 110
 Thr Gly Leu Tyr Ile Cys Lys Val Glu Leu Met Tyr Pro Pro Pro Tyr
 115 120 125
 Tyr Leu Gly Ile Gly Asn Gly Thr Gln Ile Tyr Val Ile Asp Pro Glu
 130 135 140
 Pro Cys Pro Asp Ser Asp Leu Glu Gly Ala Pro Ser Val Phe Leu Phe
 145 150 155 160
 Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
 165 170 175
 Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
 180 185 190
 Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
 195 200 205
 Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
 210 215 220
 Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
 225 230 235 240
 Ser Asn Lys Ala Leu Pro Thr Pro Ile Glu Lys Thr Ile Ser Lys Ala
 245 250 255
 Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
 260 265 270
 Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
 275 280 285
 Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
 290 295 300
 Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser
 305 310 315 320
 Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
 325 330 335
 Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
 340 345 350
 Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 355 360

<210> 101
 <211> 12
 <212> PRT
 <213> Homo sapiens

<400> 101
 Met His Val Ala Gln Pro Ala Val Val Leu Ala Ser

1

5

10

<210> 102

<211> 120

<212> PRT

<213> Homo sapiens

<400> 102

Met	His	Val	Ala	Gln	Pro	Ala	Val	Val	Leu	Ala	Ser	Ser	Arg	Gly	Ile
1				5					10					15	

Ala	Ser	Phe	Val	Cys	Glu	Tyr	Ala	Ser	Pro	Gly	Lys	Ala	Thr	Glu	Val
			20					25					30		

Arg	Val	Thr	Val	Leu	Arg	Gln	Ala	Asp	Ser	Gln	Val	Thr	Glu	Val	Cys
		35					40					45			

Ala	Ala	Thr	Tyr	Met	Met	Gly	Asn	Glu	Leu	Thr	Phe	Leu	Asp	Asp	Ser
	50					55					60				

Ile	Cys	Thr	Gly	Thr	Ser	Ser	Gly	Asn	Gln	Val	Asn	Leu	Thr	Ile	Gln
65					70					75					80

Gly	Leu	Arg	Ala	Met	Asp	Thr	Gly	Leu	Tyr	Ile	Cys	Lys	Val	Glu	Leu
				85					90					95	

Met	Tyr	Pro	Pro	Pro	Tyr	Tyr	Leu	Gly	Ile	Gly	Asn	Gly	Thr	Gln	Ile
			100					105					110		

Tyr	Val	Ile	Asp	Pro	Glu	Pro	Cys
		115					120

<210> 103

<211> 11

<212> PRT

<213> Homo sapiens

<400> 103

Met	His	Val	Ala	Gln	Pro	Ala	Val	Val	Leu	Ala
1				5					10	

<210> 104

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<220>

<221> modified_base

<222> (21)

<223> i

<400> 104

caggtgcagc tggagcagtc ngg

23

<210> 105

<211> 24
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 105
 gctgagggag tagagtcctg agga

24

<210> 106
 <211> 49
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 106
 tatctaagct tctagactcg accgccacca tggagtttgg gctgagctg

49

<210> 107
 <211> 46
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 107
 ttctctgatc agaattccta tcatttacct ggagacaggg agagct

46

<210> 108
 <211> 9
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Optimal Kozak sequence

<400> 108
 accgccacc

9

<210> 109
 <211> 45
 <212> DNA
 <213> Homo sapiens

<400> 109
 tcttcaagct tgcccggggc cgccaccatg gaaaccccag cgcag

45

<210> 110
 <211> 43
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 110

ttctttgatc agaattctca ctaacactct cccctgttga agc

43

<210> 111

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 111

tcttcaagct tgcccgggcc cgccaccatg gacatgaggg tccccgct

48

<210> 112

<211> 155

<212> PRT

<213> Homo sapiens

<400> 112

Ser Pro Asp Phe Gln Ser Val Thr Pro Lys Glu Lys Val Thr Ile Thr
1 5 10 15

Cys Arg Ala Ser Gln Ser Ile Gly Ser Ser Leu His Trp Tyr Gln Gln
20 25 30

Lys Pro Asp Gln Ser Pro Lys Leu Leu Ile Lys Tyr Ala Ser Gln Ser
35 40 45

Phe Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
50 55 60

Phe Thr Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala Thr Tyr
65 70 75 80

Tyr Cys His Gln Ser Ser Ser Leu Pro Leu Thr Phe Gly Gly Gly Thr
85 90 95

Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe
100 105 110

Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys
115 120 125

Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val
130 135 140

Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
145 150 155

<210> 113

<211> 100

<212> PRT

<213> Homo sapiens

<400> 113

Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly

1	5	10	15
Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Ser	20	25	30
Asp Gly Asn Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser	35	40	45
Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Asp Ser Gly Val Pro	50	55	60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile	65	70	75
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly	85	90	95
Thr His Trp Pro	100		

<210> 114
 <211> 139
 <212> PRT
 <213> Homo sapiens

<400> 114
Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys
1 5 10 15
Arg Ser Ser Gln Ser Leu Val Tyr Ser Asp Gly Asn Thr Tyr Leu Asn
20 25 30
Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys
35 40 45
Val Ser Asn Trp Asp Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly
50 55 60
Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp
65 70 75 80
Val Gly Val Tyr Tyr Cys Met Gln Gly Ser His Trp Pro Pro Thr Phe
85 90 95
Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser
100 105 110
Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala
115 120 125
Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro
130 135

<210> 115
 <211> 100
 <212> PRT
 <213> Homo sapiens

<400> 115
 Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly

1	5	10	15
Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser	20	25	30
Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser	35	40	45
Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro	50	55	60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile	65	70	75
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala	85	90	95
Leu Gln Thr Pro	100		

<210> 116
 <211> 133
 <212> PRT
 <213> Homo sapiens

<400> 116
Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu
1 5 10 15
His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly
20 25 30
Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly
35 40 45
Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu
50 55 60
Lys Leu Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met
65 70 75 80
Gln Ala Leu Gln Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu
85 90 95
Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser
100 105 110
Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn
115 120 125
Asn Phe Tyr Pro Arg
130

<210> 117
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 117
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly

1 5 10 15
 Asp Arg Val Thr
 20

<210> 118
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 118
 Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr
 20

<210> 119
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 119
 Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr
 20

<210> 120
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 120
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr
 20

<210> 121
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 121
 Thr Gly Glu Phe Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser
 1 5 10 15

Pro Gly Glu Arg
 20

<210> 122
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 122

Glu Phe Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr
 20

<210> 123

<211> 20

<212> PRT

<213> Homo sapiens

<400> 123

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr
 20

<210> 124

<211> 20

<212> PRT

<213> Homo sapiens

<400> 124

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr
 20

<210> 125

<211> 20

<212> PRT

<213> Homo sapiens

<400> 125

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